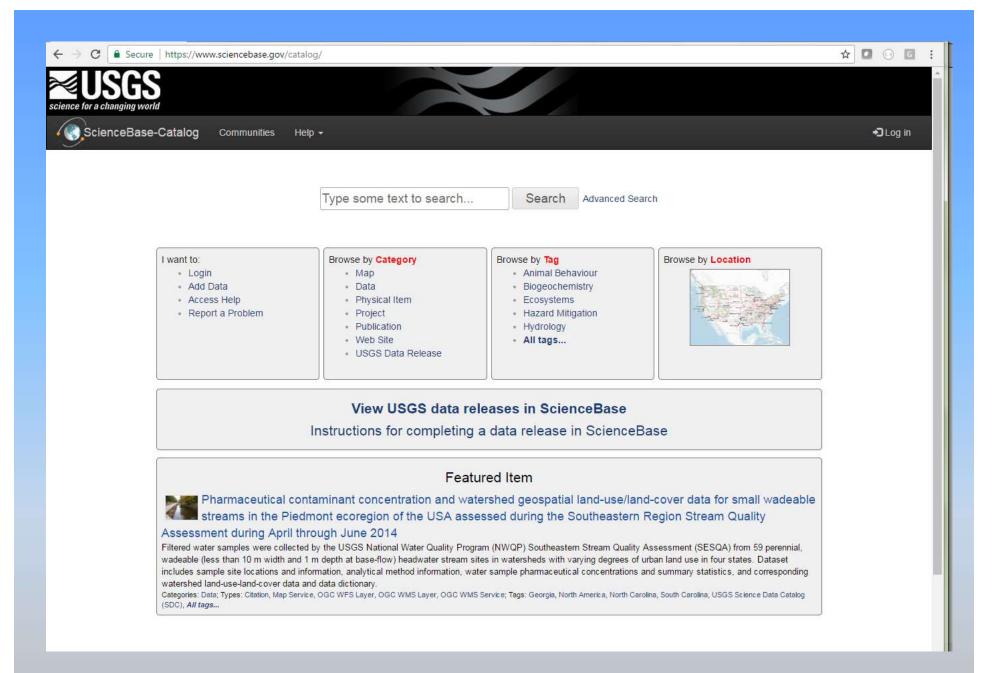
ScienceBase System Overview

Drew Ignizio
ScienceBase Project Lead
USGS Core Science Analytics, Synthesis & Libraries

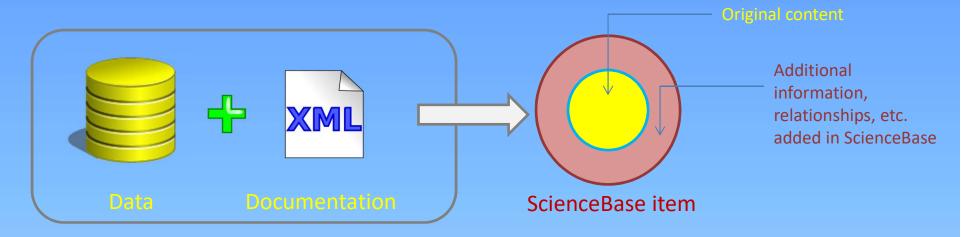


What exactly is ScienceBase?

- -Data platform
- -Collaborative workspace (permission controlled access)
- -Content management system for websites and other applications
- -Data store for bureau wide resources (contacts, bureau groupings, vocabularies, etc.)
- -Machine accessible location for data (support for tools and workflows)
- -Data hosting to support open access and data citation
- -Metadata catalog, metadata harvest support
- -Advanced search and structured query results



- -Add value to digital data and content.
- -API based access and services to expose data to downstream applications and workflows.
- -Organized and documented content enables meaningful querying abilities, integration into dynamic collections, programmatic access, and consistent informational facets (e.g., Title, Abstract, Keywords).
- -Advanced support for certain file types (metadata ingestion, geospatial services).
- -Overarching notion of 'context' for items in different collections, etc.
- -Cross-system integration include: Inputs from API use, WAF harvest, MODS feed, etc., Output via CSW, API queries, OAIPMH, WMS/WFS, WCS/WMS.
- -Modern digital architecture to support web-enabled, actionable data resources.

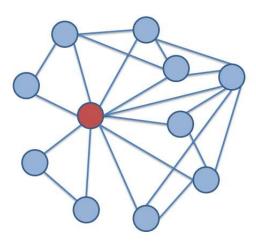




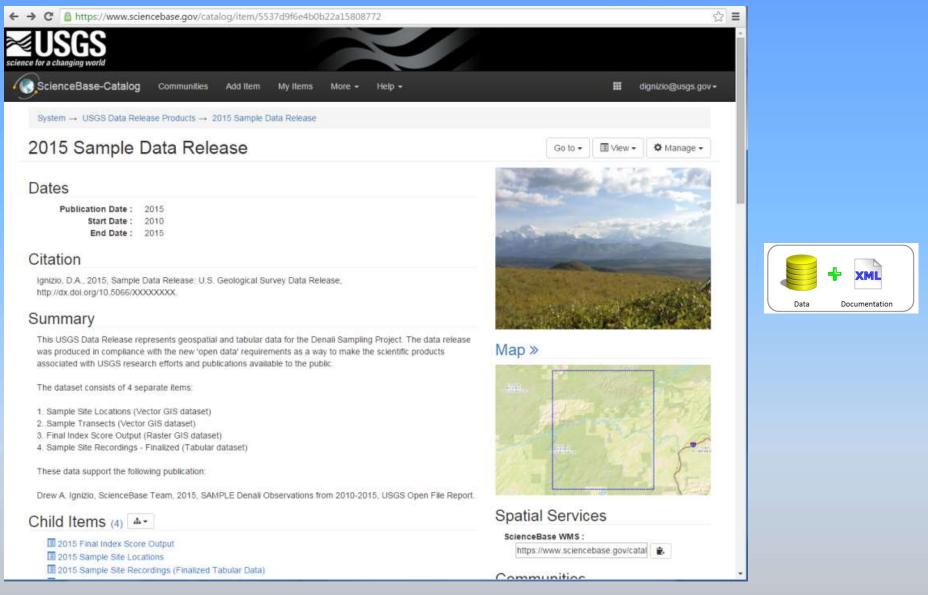
ScienceBase Components (Agents)

- catalog
- catalogMaps
- footprinter
- upload
- fgdcToIso-service
- directory
- vocab
- spatialTransform

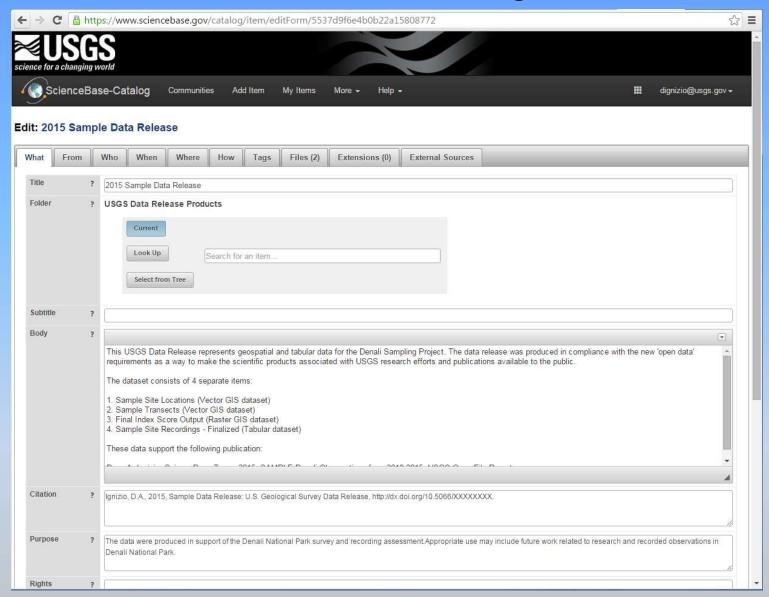
- s3-service
- metrics
- reports
- datavis-service
- mobileCache
- crawler
- wfsIngestor
- temporalTransform



Item exists independently at a URL endpoint. Item can also be related to other ScienceBase resources and connected to other processes and systems.



An item can be interacted with in various ways.





An item can be interacted with in various ways.

```
☆ 🖸 ① 🖟 :
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                                                                                                                                                         Parsed
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  'open data' requirements as a way to make the scientific products associated with USGS research efforts and publications available to the public. The dataset
 consists of 4 separate items: 1. Sample Site Locations (Vector GIS dataset) 2. Sample Transects (Vector GIS dataset) 3. Final Index Score Output (Raster GIS
 dataset) 4. Sample Site Recordings - Finalized (Tabular dataset) These data support the following publication: Ignizio, D.A., 2015, Sample associated publication:
 U.S. Geological Survey Open-File Report 2016-xxxx, xx p., http://dx.doi.org/10.3133/ofr2015xxxx.",
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\n/br>\n/The
 dataset consists of 4 separate items:<br/>\n<br/>1. Sample Site Locations (Vector GIS dataset)<br/>\n2. Sample Transects (Vector GIS dataset)<br/>dr>\n3. Final Index
 Score Output (Raster GIS dataset)<br/>h1. Sample Site Recordings - Finalized (Tabular dataset)<br/>h7\n7hese data support the following
 publication:\nIgnizio, D.A., 2015, Sample associated publication: U.S. Geological Survey Open-File Report 2016-xxxx, xx p., ≺a
 href=\"http://dx.doi.org/10.3133/ofr2015xxxx\">http://dx.doi.org/10.3133/ofr2015xxxx</a>.\n",
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```











An item can be interacted with in various ways.



ScienceBase /... / ScienceBase Information Model

ScienceBase Item Core Model

Created by Unknown User (rprescott@usqs.gov), last modified by Tekell, Steven on Dec 18, 2015

The ScienceBase Item core is based on the Dublin Core Metadata Element Set but also includes other elements that may integrate across multiple metadata standards, conventions, and practices in describing a wide array of scientific data and

The following documentation describes the ScienceBase Item core elements, how those elements are related to applicab in ScienceBase. The sbJSON syntax is further transformed into various forms of XML and other outputs to support numer



⚠ The ScienceBase Item core model is continuing to be refined over time as we work to bring alignment across additional across across additional across additional across additional across additional across we will try to keep notes on this evolution here up to date.

To view the full JSON for a ScienceBase item, click here.

To view additional information you can have on ScienceBase items through Extensions, click here.

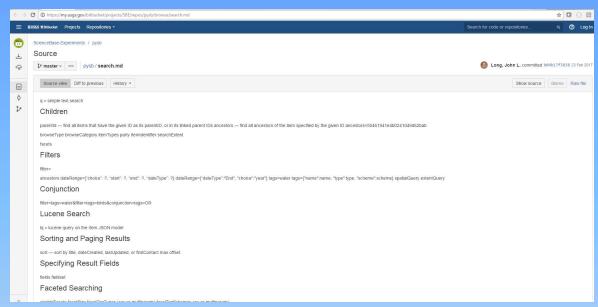
The Fields

- title
- subTitle
- alternateTitles
- id
- body
- summary
- citation
- identifiers
 - identifier Object
- link
- purpose
- rights
- - provenance Object
- materialRequestInstructions
- hasChildren
- parentid
- contacts
 - contact Object

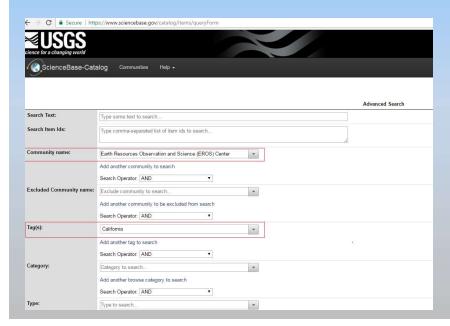
An item represents a defined data model.

(https://my.usgs.gov/confluence/display/sciencebase/ScienceBase+Item+Core+Model

ScienceBase – Advanced Query Capabilities



https://my.usgs.gov/bitbucket/projects/SBE/repos/pysb/browse/search.md



ScienceBase – Advanced Query Capabilities



1 https://www.sciencebase.gov/catalog/items?q=&lq=(tags.name(+birds)%2520AND%2520tags.name(+water))%2520OR%2520tags.name(+WY)



ScienceBase-Catalog

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Help -

Type some text to search.

Search

Advanced Search

767 983 results (7.5s)

Filters

Date Range

- Past year (306515)
- Past month (10865)
- Past week (2836)
- Past day (110)
- Custom range.

Extensions

- NGGDPP Item (208377)
- Citation (108602)
- BASIS Plus (25443)
- Project (9019)
- Shapefile (1890)
- More...

Types

- Citation (149053)
- BASIS+ Task (18279)
- Map Service (7894)
- OGC WMS Layer (6079)
- OGC WFS Layer (6063)
- More...

Categories

- Physical Item (568345)
- Publication (109175)
- Project (30474)
- Data (6179)
- Image (1037)
 More...

Contacts

- · Peter Schoephoester
- Wisconsin Geological and Natural History Survey



Meteorological Database, Argonne National Laboratory, Illinois, January 1, 1948 -September 30, 2014

IMPORTANT NOTE: On September 27, 2016, a formatting error in these data was discovered. This error involves extra spaces in certain lines of the .txt data files, which may cause an error in the interpretation of the data values or data-source flags when read by other software. This error has been corrected in the WY 2015 data which can be accessed from this link. The U.S. Geological Survey (USGS), in cooperation with DuPage County, Illinois, maintains a Watershed Data Management (WDM) database consisting of hourly dewpoint temperature, air temperature, solar radiation, wind speed data based on the data collected at the Argonne National Laboratory (ANL) and hourly obtential evapotranspiration computed from them...

Types: Citation, Map Service, OGC WFS Layer, OGC WMS Layer, OGC WMS Service: Tags: Hydrology, potential evapotranspiration, forecasting, USGS Science Data Catalog (SDC), solar radiation, All tags...



Data for calculating population, collision and displacement vulnerability among marine birds of the California Current System associated with offshore wind energy infrastructure

Data and associated publication are currently under revision. Updates to the data are expected in early June. (5/25/2017) The U.S. Geological Survey, Western Ecological Research Center (USGS-WERC) was requested by the Bureau of Ocean Energy Management (BOEM) to create a database for marine birds of the California Current System (CCS) that would allow quantification and species ranking regarding vulnerability to offshore wind energy infrastructure (OWEI). This was needed so that resource managers could evaluate potential impacts associated with siting and construction of OWEI within the California Current System section of the Pacific Offshore Continental Shelf, including California, Oregon, and Washington. Along...

Types: Citation, Map Service, OGC WFS Layer, OGC WMS Layer, OGC WMS Service; Tags: Ocean wind energy, USGS Science Data Catalog (SDC), Vulnerability assessment, Biota, California Current System, All tags...



Associated data for Water Quality and Sediment Quality in the Albemarle Sound, North Carolina, 2012–14

This data release contains environmental and quality control results for chemical, biological, and physical sampling of water and bed sediment from Albemarle Sound and associated tributaries between 2012 and 2014 referenced in USGS OFR 2016-1171. Appendix 1 contains all quality control results to characterize the bias and variability of sampling, handling, and analysis of water, phytoplankton, and bed sediment samples. Appendix 2 contains all the chemical, biological, and physical results for water samples collected in July and August of 2012. Appendix 3 contains all the chemical, biological, and physical results for water samples collected from March 2013 to February 2014. Data are included for discrete samples...

Types: Map Service, OGC WFS Layer, OGC WMS Layer, OGC WMS Service; Tags: water chemistry, Dare County, Pasquotank County, aquatic biology. Albemarie Sound, All tags...



Water-quality distribution in the Chicago Sanitary and Ship Canal, USGS towed multiparameter sonde, Daily tow data files (Feb. 25-27, 2010 and March 2-3, 2010)

These data files include georeferenced water-quality data with associated time stamps (Central Standard Time) for basic water-quality parameters as measured by a towed multiparameter sonde (YSI 6920 sonde) from a manned boat in the Chicago Sanitary and Ship Canal. Data were collected on February 25-27, 2010, and again on March 2-3, 2010. The data collected in February 2010 had the sonde on a fixed mount about 1 foot below the surface. The data collected in March 2010 had the sonde on a towed cable about 7-9 feet below the surface. All data have been edited and reviewed. Omitted data have been flagged with a data value of -9999 in the data files. Categories: Data; Types: Citation, Map Service, OGC WFS Layer, OGC WMS Layer, OGC WMS Service; Tags: Will County, USGS Science Data Catalog (SDC), Cook County, Illinois, DuPage County, Alf tags...



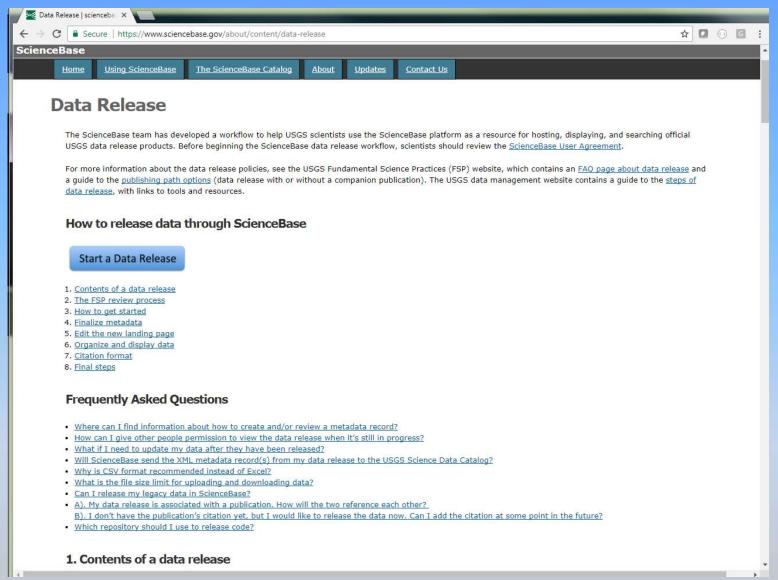
https://www.sciencebase.gov/catalog/items?q=&lq=(tags.name(+birds)%2520 AND%2520tags.name(+water))%2520OR%2520tags.name(+WY)

Formal Data Publishing

ScienceBase Catalog → USGS Data Release Products → Bathymetry and backscatter ... Bathymetry and backscatter intensity of the sea floor of the Hudson Shelf Go to -Valley Dates Publication Date: 2017 Citation Butman, Bradford, Danforth, W.W., Clarke, J.E.H., and Signell, R.P., 2017, Bathymetry and backscatter intensity of the sea floor of the Hudson Shelf Valley: U.S. Geological Survey data release, https://doi.org/10.5066/F7C53J1Z. Summary The Hudson Shelf Valley is the submerged seaward extension of the ancestral Hudson River drainage system and is the largest physiographic feature on the Middle Atlantic continental shelf. The valley begins offshore of New York and New Jersey at about 30-meter (m) water depth, runs southerly and then southeasterly across the Continental Shelf, and terminates on the outer shelf at about 85-m water depth landward of the head of the Hudson Canyon. Portions of the 150-kilometer-long valley were surveyed in 1996, 1998, and 2000 using a Simrad EM1000 multibeam echosounder Map » mounted on the Canadian Coast Guard ship Frederick G. Creed. The purpose of the multibeam echosounder surveys was to map the bathymetry and backscatter intensity of the sea floor of the valley, providing a framework for geologic, **Spatial Services** oceanographic, and geochemical studies. The data from the three surveys are combined to produce grids of bathymetry and backscatter intensity at 12-m resolution that cover the entire valley and the head of the Hudson ScienceBase WMS: Canyon. The mapping was done by the U.S. Geological Survey in cooperation with the U.S. Army Corps of Engineers https://www.sciencebase.gov/catalc with support from the Canadian Hydrographic Service and the University of New Brunswick. Child Items (7) 4-Communities USGS Data Release Products * Bathymetry of the Hudson Shelf Valley (12-m resolution Esri binary grid and 32-bit GeoTIFF, Mercator, WGS 84) ■ GeoTIFF image of shaded-relief bathymetry of the sea floor of the Hudson Shelf Valley (12-m resolution, Provenance B GeoTIFF image of shaded-relief bathymetry, colored by backscatter intensity, of the sea floor of the Hudson Shelf Data source: Input directly Valley (12-m resolution, Mercator, WGS 84) GeoTIFF image of the backscatter intensity of the sea floor of the Hudson Shelf Valley (12-m resolution. Mercator, WGS 84) III Tracklines of a multibeam survey of the Hudson Shelf Valley carried out in 1996 (polyline shapefile, geographic,

https://www.sciencebase.gov/catalog/item/5894f53ae4b0fa1e59b86a2e

Formal Data Publishing



https://www.sciencebase.gov/about/content/data-release

Integrated Applications and Workflows







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- ScienceBase Catalog
- ScienceBase Directory
- · ScienceBase Vocab
- · ScienceBase Data Explorer

Web Sites powered by ScienceBase

- · Great Lakes Restoration Initiative (GLRI)
- · Mercury Core Library and Data Center
- · USGS Denver Library Photographic Collection
- Data Entry for Project Tracking and Highlighting (DEPTH)
- · Project Tracking Dashboard (PDash)
- · National Climate Change and Wildlife Science Center (nccwsc.usgs.gov)
- Wyoming Landscape Conservation Initiative (www.wlci.gov)
- · DLCC (Desert Landscape Conservation Cooperative)
- Northern Prairie (www.npwrc.usgs.gov)
- EERMA
- WLCI Map Viewer
- Wyoming Basin REA
- · WLCI Integrated Assessment
- · Western Energy Citation Database (WECC)
- · Landscape Energy Action Plan/IPaC (LEAP)
- · National Fish Habitat Partnership
- NWCOI
- PPGIS Talking Points
- · Sagegrouse Conservation Efforts
- · CC Map
- CSC RFP Manager
- · CDI RFP Manager
- · LCC RFP Manager

More

· Confluence (FORTPROJ): Projects that use the ScienceBase Catalog

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www.sciencebase.gov

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